UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 10/827,491 | 04/20/2004 | Hei-Tong Ching | 4444-0143PUS1 | 3297 |

2292 7590 06/05/2006

BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747

| EXAMINER | |
|---|---|
| AKANBI, ISIAKA O | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2877 | |

DATE MAILED: 06/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/827,491 | CHING ET AL. | |
| | Examiner | Art Unit | |
| | Isiaka O. Akanbi | 2877 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *22 February 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5-20,22-27* is/are rejected.

7)☒ Claim(s) *4 and 21* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 March 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### *Preliminary Amendment*

The preliminary amendment file 22 February 2006 has been entered into this application.

### *Drawings*

The examiner approves the drawings filed 22 February 2006.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3, 7, 16, 24 and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Stevens et al. (5,900,131).

Regarding claim 1, Stevens discloses optical measuring apparatus shown in fig. 3 that is a reflection apparatus, comprising:

a light source (106) and guiding module (302) having a light source module and a light-guiding apparatus, said light source module providing a spontaneous emission light, and said light-guiding apparatus (301) reflecting said spontaneous emission light to a linear incident light, and said linear incident light is passed through a detection area (305) and a receiving module (309) for imaging and processing said linear incident light passed through said detection area (305)(fig. 3).

As to claim 2, according to claim 1, Stevens discloses said light-guiding apparatus (302/301) is configured between said light source (106) module and said detection area (305) (see fig. 3).

Claims 3 and 18, Stevens discloses further wherein said light source module comprising LED light array (col. 9, line 18-20).

As to claims 7 and 24, Stevens discloses wherein said light-guiding apparatus is the combination of a plurality of bundle fibers (fig. 3)(301) (Col. 9, line 13-15).

As to claim 16, Prober discloses an optical measurement apparatus, comprising:

a light source module (106) for providing a spontaneous emission light, a light-guiding apparatus (302/301) for reflecting said spontaneous emission light to a linear incident light, and said linear incident light is passed through a detection area (305), an image module (309) for imaging said linear incident light passed through said detection area (305) and an image-sensing module (309) for receiving and processing said linear incident light imaged by said image module (see fig. 3).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 5, 9, 14, 20, 22 and 27are rejected under 35 U.S.C. 103(a) as being unpatentable over Stevens et al. (5,900,131) as applied to claims 1 and 16, in view of the examiner Official Notice.

As to claims 5 and 22, the reference of Stevens is silent with regard to the material used for the light guiding apparatus (302/301). The examiner wishes to take Official Notice of the fact that the use of glass, acrylics or polycarbonate as filler in a light guiding apparatus would have been well known. It would have been obvious at the time of invention to use glass, acrylics or

polycarbonate materials as filler for the lens of light guiding apparatus, since these are well known lens materials used for their known advantages such as setting the index of refraction and that transmit light throughout their length by internal reflections.

As to claim 9 and 20, the reference of Stevens is silent with regard to a light-mending lens, configured between said light source module (106) and said detection area (305) and the type of material of said light-mending lens is choose from the group consisting of (i.e. glass, acrylics, and polycarbonate). The examiner wishes to take Official Notice of the fact that the use of light-mending lens choose from the group consisting of (i.e. glass, acrylics, and polycarbonate), configured between said light source module and detection area would have been well known. It would have been obvious at the time of invention to use light-mending lens choose from the group consisting of (i.e. glass, acrylics, and polycarbonate), configured between said light source module and detection area for the purpose of evenly distribution of light in combination with fiber. It would have been obvious at the time of invention to use glass, acrylics or polycarbonate materials as light-mending lens of optical measurement apparatus, since these are well known lens materials used for their known advantages such as (reforming or correcting an image) setting the index of refraction and that transmit light throughout their length by internal reflections.

As to claim 14 and 27, Stevens discloses wherein said image-sensing module comprising a sensor (309) except for not explicitly/clearly disclosing the type of the sensor used for the receiving module. The examiner wishes to take Official Notice of the fact that the use of an area sensor or a linear sensor to detect/sense (reflected or transmitted) light would have been well known. It would have been obvious at the time of invention to use an area sensor and a linear sensor for optical receiving module, since these are well known detectors/sensor used for their known advantages such as having a have degree of sensitivity within the spectral bands of interest.

Claims 6 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stevens et al. (5,900,131).

As to claims 6 and 23, in a different embodiment Stevens discloses wherein the exterior of the light-guiding apparatus is a combination of a plurality of reflection elements, said spontaneous emission light is reflected and transmitted by said reflection elements (i.e. mirrors)(col. 7, line 13-16). It would have been obvious at the time of invention to use a mirror as

a reflective element in combination with fiber to direct light through the lens onto the sample, since these are well known reflective materials (mirror) used for their known advantages for achieving total reflection. It would have been obvious at the time of invention to use an array of optical fibers, since these are well known optical light guiding apparatus materials used for their known advantages in transmitting/delivering light to a linear array of detection sites.

Claims 8, 10, 11, 13, 19, 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stevens et al. (5,900,131) in view of Prober et al. (5,306,618).

As to claim 8, the reference of Stevens teaches of the features of claim 1, however it is silent regarding an excitation filter, configured between said light source module and said detection area. The reference of Prober teaches of an excitation interference filter (32) (fig. 1)(col. 11, line 12-14). It would have been obvious to one having ordinary skill in the art at the time of invention to incorporate the teachings of Stevens in conjunction with Prober to use an excitation filter for the purpose of altering or isolating a segment of the spectrum.

As to claim 10, the reference of Stevens teaches of the features of claim 1, however it is silent regarding optical receiving module comprising an image module and an image-sensing module and said image module is configured between said detection area and said image-sensing module. The reference of Prober teaches of an optical receiving module that includes an image module (40) and an image-sensing module (38), and the image module is configured between detection area (42) and image-sensing module (see fig. 1). It would have been obvious to one having ordinary skill in the art at the time of invention to incorporate the teachings of Stevens in conjunction with Prober to use the image module in combination with fiber for the purpose of directing excitation or incident light toward the sample and light monitor, and to direct light leaving the sample toward the detector.

As to claim 11 and 25, the reference of Stevens is silent regarding image module comprising a focusing lens. The reference of Prober discloses optical system/apparatus that includes focusing lens (40)(col. 12, line 8-10). It would have been obvious to one having ordinary skill in the art at the time of invention to incorporate the teachings of Stevens in conjunction with Prober to use the focusing lens in combination with fiber for the purpose of projecting an image onto the sample.

As to claim 13 and 26, the reference of Stevens is silent regarding image-sensing module comprising a filter lens and a dichroic mirror. The reference of Prober teaches of image-sensing module (38) comprises a filter lens and a dichroic mirror (col. 12, line 13-20). It would have been obvious to one having ordinary skill in the art at the time of invention to incorporate the teachings of Stevens in conjunction with Prober to use the spectral filters/filter lens for the purpose of separating light spatially by wavelength and use the dichroic beamsplitter/mirror in combination with fiber for the purpose of reflecting most or substantially all of the excitation/emission light onto the sample.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stevens et al. (5,900,131) in view Prober et al. (5,306,618), and further in view of the reference of Simpson et al. (6,017,434)

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stevens in view of Prober as applied to claim 11 above, and further in view of the reference of Simpson. The reference of Stevens discloses focusing lens (40) (col. 12, line 8-10), however it is silent regarding the image module comprising a micro diffraction grating configured between said detection area and said focusing lens, and the image module comprises a projection lens between said focusing lens and said image-sensing module. The reference of Simpson teaches of image module comprising a micro diffraction grating to separates light into rays of different wavelength, which diverge along the direction of spectral axis, a projection/collection lens (222) collimates the scattered light into parallel rays (col.10, line 43-55). Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention to incorporate the teachings of Stevens and Prober in conjunction with Simpson to use the projection/collection lens in combination with fiber for the purpose of projecting an image onto the sample/detector.

Claims 15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over of Stevens et al. (5,900,131) in view of Prober et al. (5,306,618) and Simpson et al. (6,017,434), and further in view of the reference of Hayashizaki et al. (6,120,667).

As to claims 15 and 17, the reference of Stevens teaches of the features of claim 1 and 16, further the reference of Stevens suggested scanning the test sample (col. 8, line 26-33),

however the reference of Stevens is silent regarding a test sample that move in one-dimension direction. The reference of Hayashizaki teaches of a sample stage that moves (fig. 10). It would have been obvious to one having ordinary skill in the art at the time of invention to provide a platform for supporting and transporting a test sample to move in one-dimension direction for the purpose of measuring/detecting the sample with accuracy.

### *Allowable Subject Matter*

Claims 4 and 21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

As to claims 4 and 21, the prior art of record, taken alone or in combination, fails to disclose or render obvious the geometric type of the light-guiding apparatus is selected from the group consisting of an arc-line-type wedge-shaped light-guiding apparatus and a straight-line-type wedge-shaped light-guiding apparatus.

### Additional Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The references listed in the attached form PTO-892 teach of other prior art optical measuring apparatus that may anticipate or obviate the claims of the applicant's invention.

### *Conclusion*

### Official Notice

Several facts have been relied upon from the personal knowledge of the examiner about which the examiner took Official Notice. Applicant must seasonably challenge well known statements and statements based on personal knowledge. In re Selmi, 156 F.2d 96, 70 USPQ 197 (CCPA 1946); In re Fischer, 125 F.2d 725, 52 USPQ 473 (CCPA 1942). See also In re Boon, 439 F.2d 724, 169 USPQ 231 (CCPA 1971) (a challenge to the taking of judicial notice must contain adequate information or argument to create on its face a reasonable doubt regarding the circumstances justifying the judicial notice). If applicant does not seasonably traverse the well-known statement during examination, then the object of the well-known statement is taken to be admitted prior art. In re Chevenard, 139 F.2d 71, 60 USPQ 239 (CCPA 1943). A seasonable challenge constitutes a demand for evidence made as soon as practicable

during prosecution. Thus, applicant is charged with rebutting the well-known statement in the next reply after the Office action in which the well-known statement was made. See MPEP 2144.03, paragraphs 4 and 6.

**Fax/Telephone Information**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Isiaka Akanbi whose telephone number is (571) 272-8658. The examiner can normally be reached on 8:00 a.m. - 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley Jr. can be reached on (571) 272-2059. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Isiaka Akanbi
May 17, 2006

Gregory J. Toatley, Jr.
Supervisory Patent Examiner
2[illegible]/06